

The specimens of the females *horsfieldi* and *mutura* (= *melanotus*) in the Natural History Museum are alike in pattern and general coloration; the pale margins of the breast-feathers distinguish them from the breast of the female *nycthemerus*, which in the typical form has a distinct white pattern on a dark ground. We must remember *G. melanotus* was the female parent in Mr. Phillips's experiment.

A few weeks ago Mr. Phillips was in this country and examined the Museum specimens in the Bird Room of *G. horsfieldi* and *G. mutura* (= *melanotus*) to ascertain which species he had used, but neither seemed to recall his own specimen, and he returned to America in doubt; it has been suggested that to solve the doubt he might send over his skins to the Museum for examination.

Since writing the above I have received the following letter from Mr. Phillips, in which he acknowledges that he made a mistake in identification:—

“The bird which I used in my crosses was certainly the straight *melanotus*. I compared my old stock with specimens in the Museum of Comparative Zoology in Cambridge at the time and they checked up entirely. I looked at the Museum of Comparative Zoology specimens again to-day, and they are like the ones you showed me in London, black on whole upper side, but not black on breast. It was my mistake: it should have read ‘whole upper surface black.’ I am glad you called my attention to it.”

“Sincerely yours,

“June 19, 1922.

“JOHN C. PHILLIPS.”

XL.—*A Note on Acquired or Somatic Variations.*

By PERCY R. LOWE.

MR. WITHERBY in ‘The Ibis’ for April 1922, p. 331 *et seq.*, expressed himself as unconvinced of the soundness of my contention (Ibis, 1922, p. 185) to the effect that the distinctive darker coloration of the Bermudan Goldfinch would not be inherited but would be re-acquired in each generation.

I would crave the indulgence of readers of 'The Ibis' while I make an additional defence of my statement; for, tired as they may be of the Bermuda Goldfinch, the principle at stake is one, the importance of which can hardly be exaggerated if we are to take any interest in the philosophical side of Ornithology, and, more particularly, in the subject of Variations and the part they play in Evolution. The problem, simply stated, resolves itself into this—is this character (the darker coloration which distinguishes Bermudan from European Goldfinches) hereditarily inborn or is it due to some somatic modification either "ante-natal" or "post-natal"?

If the character is inherited, then it is inherited through some controlling factor or gene which is represented in the chromosomes of the nuclei present in the germ-cells of the parent birds. I have already stated that I cannot believe this to be the case.

On the other hand, the following explanation appears to me to be the more likely solution of the problem; at the same time it might possibly solve Mr. Witherby's difficulty in connection with the distinctive character appearing in the first brood hatched on the island, or that which some ornithologists feel in accounting for the fact that the chicks of other similar variations in other species are hatched with the variation already evident before external environmental influences have had time to operate.

The fertilized ovum then, according to my contention, contains no factor for a "darker coloration," but as it passes along the oviduct it receives an enveloping layer or mantle of albumen derived from maternal sources. It is obvious that this maternal nurture, taken in conjunction with the maternal blood-supply present in the follicular stroma of the ovary, must play an important part in the development and vigour of the ovum. The ovum is, in fact, both before and after fertilization, surrounded by a somatic maternal environment. If the vigour or the physio-chemical tone of the parents has been intensified by a congenial external environment such as the Bermudas, all the

developmental processes taking place in the ovum will evidently be correspondingly intensified. Among those processes will be that of pigmentation, so that there need not be much difficulty in accounting for the fact that the chick's nestling, fledgling, or juvenile plumage will be richer in coloration than that of a corresponding European chick, if, indeed, such is actually the case—the point to be noted, and this is obviously the crucial point, being that the darker pigmentation is acquired and due to somatic influences and has, if my contention is correct, no connection whatever with germinal factors.

It is therefore evident that if we take this view of the case, the darker pigmentation of the Bermudan Goldfinch is not inherited in the proper sense of the term, but is acquired afresh after the fertilization of each ovum, so that if we were to place the parent-birds in a less vigorous or less congenial environment or in one less prone to produce intensification of pigmentation, the coloration process would return to its normal and original base-level.

We may perhaps venture another step and deduce from the above premisses that intensified pigmentary processes of this kind play no part in the evolution of the species. They would appear to be merely temporary expressions in space on the part of any given species at any given secular period; and, as compared with more deep-seated blastogenic mutations or variations, either in the orthogenetic or fortuitous progress of the species in Time, would appear to be superficial, transitory, and as it would seem from the point of view of the genesis of new species, negligible.

As Prof. Arthur Thomson\* has written, "From an unbiassed registration of all observed differences between the members of the same species there have to be subtracted all peculiarities that can be reasonably interpreted as associated with age and sex, or as individually-acquired somatic

\* "The System of Animate Nature" or the Gifford Lectures delivered in the University of St. Andrews in the years 1915 and 1916, p. 433.

modifications directly due to peculiarities of nurture, whether environmental, nutritional, or functional. As there is no convincing evidence at present that these extrinsic somatic modifications can be transmitted as such, or in any representative degree, they cannot be included, in the first instance at least, among the raw materials of racial evolution. These are discerned when the modifications in question are subtracted from the total of observed differences. For this subtraction brings into view the true variations or mutations—inborn not acquired, blastogenic not somatogenic, endogenous not exogenous, expressions or outcomes not indents or imprints.”

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#### XLI.—Obituary.

##### WILLIAM HENRY HUDSON.

WE regret to learn of the sudden death of Mr. W. H. Hudson, which took place very suddenly in his sleep, on 18 August last, at his London residence, in his eighty-first year.

Mr. Hudson's father was one of the early emigrants to the pampas of La Plata and his son was born there, where the influence of limitless plains and of its teeming bird-life impressed itself on the whole of his subsequent writing. When still a young man he entered into a correspondence with Dr. P. L. Selater, and transmitted to him several collections of South American birds and mammals, accounts of which were published in the 'Proceedings of the Zoological Society' between 1870 and 1872, and formed the basis of a joint work published in 1888-9, under the title of 'Argentine Ornithology,' to which Mr. Hudson contributed the notes and descriptions of the birds' habits, while Dr. Selater supplied the technical descriptions. A second edition of this work was published by Mr. Hudson alone in 1920, in which all the technical matter was omitted.